

Claims

- [c1] 1. An indicator for a vehicle having an engine and an electric motor, the indicator comprising:
a tachometer gauge for displaying engine revolution speed; and
an electric only indicator for displaying whether the vehicle is operating in an electric only mode.
- [c2] 2. The indicator of claim 1, wherein the electric only indicator is integrated as part of the tachometer and further includes a needle-pointer to point at increments of the tachometer gauge to indicate engine revolution speed and to point at an electric only indicator to indicate operation in the electric only mode.
- [c3] 3. The indicator of claim 2, wherein the electric only indicator includes a graphic symbol and is positioned below a zero increment of the tachometer.
- [c4] 4. The indicator of claim 1, wherein the electric only indicator is a binary display.
- [c5] 5. The indicator of claim 4, wherein the binary display is illuminated to indicate electric only mode.

- [c6] 6. The indicator of claim 1, further comprising a controller to control the tachometer gauge and the electric only indicator.
- [c7] 7. The indicator of claim 1, wherein electric only mode is displayed only if an engine revolution speed drops below a predefined threshold.
- [c8] 8. The indicator of claim 1, wherein the electric only mode is displayed if an engine revolution speed signal is not received for a predefined period of time and an engine on/off signal indicates the engine is off.
- [c9] 9. The indicator of claim 1, wherein the electric only mode is displayed if an engine revolution speed signal is invalid for a predefined period of time and an engine on/off signal indicates the engine is off.
- [c10] 10. The indicator of claim 1, wherein the electric only indicator is activated only after a successful engine start.
- [c11] 11. The indicator of claim 1, wherein the electric only indicator is activated only after a battery charge of a battery used to drive the electric motor is greater than a predefined battery charge threshold.
- [c12] 12. The indicator of claim 1, further comprising an audio sound generator for audibilizing activation of the electric

only indicator.

- [c13] 13. The indicator of claim 1, wherein the electric only indicator does not indicate energy available for driving the electric motor.
- [c14] 14. A method for indicating electric only mode operation of a hybrid electric vehicle having an internal combustion engine and an electric motor, the method comprising:
 - determining an engine speed;
 - displaying the engine speed in revolutions per minute (RPM) on a tachometer gauge; and
 - displaying in a display an electric only mode if the RPM drops below a predefined threshold.
- [c15] 15. The method of claim 14, wherein the electric only mode is displayed by controlling a needle used to select increments on the tachometer gauge to point to an electric only indicator.
- [c16] 16. The method of claim 15, wherein controlling the pointer to point to the electric only indicator comprises controlling the needle to point to a position below a zero increment of the tachometer gauge.
- [c17] 17. The method of claim 14, wherein the electric only mode is displayed by controlling an LED to illuminate the electric only indicator.

- [c18] 18. The method of claim 14, further comprising determining an engine on/off status, and displaying the electric only mode if the engine is off and engine speed is zero.
- [c19] 19. An instrument cluster for a hybrid vehicle having an internal combustion engine and an electric traction motor, the cluster comprising:
a tachometer gauge having a needle pointer for displaying a revolutions per minute (RPM) of the engine; and
an electric only indicator positioned below a zero increment of the tachometer gauge and reachable by the needle pointer for displaying an electric only mode.
- [c20] 20. The instrument cluster of claim 19, further comprising a controller configured for receiving an RPM signal and an engine on/off signal from a vehicle controller, wherein the controller controls the needle to point at the electric only indicator to indicate the electric only mode if any of the following conditions are true:
(i) the RPM is less than a predefined threshold;
(ii) the RPM signal is missing for a predefined period of time and the engine on/off signal indicates the engine is off; or
(iii) the RPM signal is invalid for a predefined period of time and the engine on/off signal indicates the engine is

off.